National Institute of Environmental Health Sciences

# Climate change, aerobiology, and public health in the Northeast United States

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**Abstract:**

The epidemiological implications with respect to climate change and public health (e.g., shifts in disease vectors) are beginning to be acknowledged. Less recognized however, are the potential links between climate, plant biology and public health. In addition to being affected by climate (e.g., temperature determines plant range), carbon dioxide (CO(2)) represents the raw material needed for photosynthesis and its rapid increase in the atmosphere is expected to stimulate plant growth. While there are a number of means by which plant biology intersects with human health (e.g., plant nutrition), one of the most widely recognized is aerobiology; specifically, the ability of plants to both produce pollen and to serve as a substrate for molds/fungi (e.g., sporulation). The current review represents an initial attempt to coalesce what is known regarding the likely impacts of climate/CO(2) on plant pollen/fungal spores and associated allergic disease that are, or could be, specific to the Northeast United States. Although the current results indicate a number of potentially unfavorable effects, we wish to stress that the current data are based on a small number of experiments. Additional data are crucial to both reduce epidemiological uncertainty and to derive a robust set of mitigation / adaptation strategies.

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## Resource Description

**Exposure :**

weather or climate related pathway by which climate change affects health

Air Pollution, Ecosystem Changes, Temperature, Unspecified Exposure

**Air Pollution:** Allergens

**Temperature:** Fluctuations

**Geographic Feature:**

resource focuses on specific type of geography

None or Unspecified, Urban

**Geographic Location:**

resource focuses on specific location

United States

**Health Impact:** ☑

specification of health effect or disease related to climate change exposure

Other Health Impact

**Other Health Impact:** allergic diseases

**Mitigation/Adaptation:** ☑

mitigation or adaptation strategy is a focus of resource

Adaptation

**Resource Type:** ☑

format or standard characteristic of resource

Review

**Timescale:** ☑

time period studied

Time Scale Unspecified

**Vulnerability/Impact Assessment:** ☑

resource focus on process of identifying, quantifying, and prioritizing vulnerabilities in a system

A focus of content